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Optimization of coating parameters on coating morphology of basalt short fiber for preparation of Al/Ba salt metal matrix composites

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Abstract

An attempt has been made to study the influence of coating for deposition of copper on short basalt fiber using electroless coating. A mathematical modeling was generated using Genetic programming and the results were validated using DISCIPULUS^{TM} software. Design of Experiments (DOE) based on techniques of Taguchi, was performed to acquire data in controlled way. An orthogonal array and ANOVA were employed to investigate the influence of coating parameters on the basalt fiber. A L_{27} orthogonal array was selected for the analysis of the data. Investigation to find the effect of time for sensitization, time for activation & time for metallization was carried out using S/N ratio and regression equations for each response were developed. Results show that metallization time has the highest influence followed by activation time and sensitization time. Finally, confirmation tests were carried out to verify the experimental results, scanning Electron Microscopic & EDS studies were done on the basalt fiber.

Biography

Dr. S paul Vizhaian has completed his PhD from Bangalore University. He is the Chairman of Department of Mechanical Engineering, UVCE, of Bangalore University. He has published more than 50 papers in reputed journals and has been serving in UVCE since 28years. He is guiding five research scholars for their Ph.D Degree.